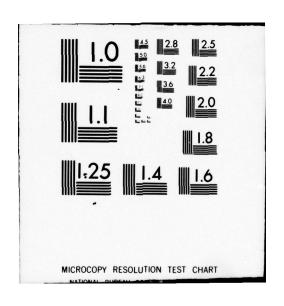
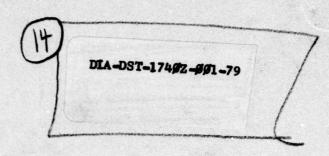
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20. ABSTRACT

This is the Soviet Laser Bibliography for January-February 1978 and is no. 33 in a continuing series on Soviet laser developments. The coverage includes basic research on solid state, liquid, gas, and chemical lasers; components; nonlinear optics; spectroscopy of laser materials; ultrashort pulse generation; theoretical aspects of advanced lasers; and general laser theory. Laser applications are listed under biological effects; communications; beam propagation; computer technology; holography; laser-induced chemical reactions; measurement of laser parameters; laser measurement applications; laser-excited optical effects; beam-target interaction; and plasma generation and diagnostics.

Introduction

This bibliography has been compiled under an interagency agreement as a continuing effort to document current Soviet-bloc developments in the quantum electronics field. The period covered is January-February 1978, and includes all significant laser-related articles received by us in that interval. The bulk of the entries come from the approximately 30 periodicals which are known to publish the most significant findings in Soviet laser technology. Citations from the Russian Reference Journals are included, as well as entries from the CIRC data base not otherwise covered. Laser items from the popular or semipopular press are generally omitted.

For convenience we have abbreviated frequently cited source names; a source abbreviations list and an author index are included. All sources cited with no parenthetical notation are available at the Library of Congress. A parenthetical entry (RZh, KL) indicates the secondary source in which the citation was found as a bibliographic entry or abstract, but for which the original source is not currently available at the Library. The authors' affiliations are indicated by the numbers in parentheses following the authors' names in the text and are listed in the Author Affiliations List. New affiliations are assigned a new number and are added to a cumulative list which includes all affiliations from 1969 to the present. Only those affiliations which appear in this issue are listed in this issue's Author Affiliations List.

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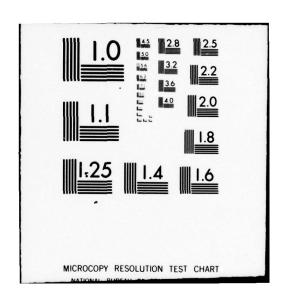
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J. BEAM-TARGET INTERACTION

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IV. SOURCE ABBREVIATIONS

((CIRC Codens)	
BAPS	(BAPTA)	Biulletin de l'Academie Polonaise des Sciences. Serie des Sciences Techniques
BWAT	(BWATA)	Biuletyn Wojskowej akademii technicznej J. Dabrowskiego
DAN B	(DBLRA)	Akademiya nauk Belorusskoy SSR. Doklady
DAN SSSR	(DANKA)	Akademiya nauk SSSR. Doklady
EOM	(EOBMA)	Elekronnaya obrabotka materialov
FA10	(IFAOA)	Akademiya nauk SSSR. Izvestiya. Fizika atmosfery i okeana
FGiV	(FGVZA)	Fizika goreniya i vzryva
FiKhOM	(FKOMA)	Fizika i khimiya obrabotka materialov
FTP	(FTPPA)	Fizika i tekhnika poluprovodnikov
FTT	(FTVTA)	Fizika tverdogo tela
IAN Arm	(IAAFA)	Akademiya nauk Armyanskoy SSR. Izvestiya. Fizika
IAN B	(VABFA)	Akademiya nauk Belorusskoy SSR. Izvestiya. Seriya fiziko-tekhnicheskikh nauk
IAN Fiz	(IANFA)	Akademiya nauk SSSR. Izvestiya. Seriya fizicheskiya
IT	(IZTEA)	Izmeritel'naya tekhnika
IVUZ Fiz	(IVUFA)	Izvestiya vysshikh uchebnykh zavedeniy. Fizika
IVUZ Priboro	(IVUBA)	Izvestiya vysshikh uchebnykh zavedeniy. Priborostroyeniye
IVUZ Radioelek	ktr (IVUZB)	Izvestiya vysshikh uchebnykh zavedeniy. Radioelektronika
IVUZ Radiofiz	(IVYRA)	Izvestiya vysshikh uchebnykh zavedeniy. Radiofizika
KE	(KVEKA)	Kvantovaya elektronika
KhVE	(KHVKA)	Khimiya vysokikh energiy

zhidkosti i gaza

Knizhnaya letopis'

Kratkiye soobshcheniya po fizike

Akademiya nauk SSSR. Izvestiya. Mekhanika

(KNLTA)

(KRSFA)

(IMZGA)

KL

KSpF

MZhiG

NM	(IVNMA)	Akademiya nauk SSSR. Izvestiya. Neorganicheskiye materialy
Ois	(OPSPA)	Optika i spektroskopiya
OMP	(OPMPA)	Optiko-mekhanicheskaya promyshlennost'
Otkr izobr	(OIPOB)	Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki
PTE	(PRTEA)	Pribory i tekhnika eksperimenta
RiE	(RAELA)	Radiotekhnika i elektronika
RZhF	(RZFZA)	Referativnyy zhurnal. Fizika
RZhGeofiz	(RZGFA)	Referativnyy zhurnal. Geofizika
RZhMekh	(RZMKA)	Referativnyy zhurnal. Mekhanika
RZhMetrolog	(RZMIB)	Referativnyy zhurnal. Metrologiya i izmeritel'naya tekhnika
RZhRadiot	(RZRAB)	Referativnyy zhurnal. Radiotekhnika
Sb1		Internationale Tagung. 3rd. Dresden, 28 March- 1 April 1977. Laser und ihre Anwendungen. Section 1, no date of publication.
Sb2		Sbornik. Vsesoyuznaya konferentsiya "Lazery na osnove slozhnykh organicheskikh soyedineniy i ikh primeneniye." 2nd. Dushanbe, 27-30 September 1977. Tezisy. Minsk, 1977.
Sb3		Optiko-fizicheskiye izmereniye. Moskva, Izd-vo standartov, 1977.
Sb4		Nelineynyye rezonansnyye preobrazovaniya lazernogo izlucheniya. Tezisy dokladov. Krasnoyarsk, 1977.
Sb5	. Vlaskovas us	Fundamental'nyye issledovaniya. Fiziko-matematich-eskiye i tekhnicheskiye nauki. Novosibirsk, Nauka, 1977.
Sb6		Goreniye i vzryv. Moskva, Nauka, 1977.
Sb7		Khimiya fizicheskikh protsessov goreniya i vzryva. Kinetika khimicheskikh reaktsiy. Chernogolovka, 1977.
Sb8		Peredacha informatsii i yeye obrabotka. Moskva, 1976.
Sb9		Elektronnyye ustroystva kontrolya i izmereniy v promyshlennosti i nauchnykh issledovaniy. Ashkhabad, 1977.

Sb10	Vsesoyuznaya konferentsiya "Radiatsionnyye effekty v tverdykh telakh," Ashkhabad, 1977. Tezisy dokladov. Ashkhabad, 1977.
Sb11	Issledovaniye ionosfery i magnitosfery metodami aktivnogo vozdeystviya. Apatity, 1977.
Sb12	Obrabotka i interpretatsiya fizicheskikh eksperimentov, no. 6, Moskovskiy universitet, 1977.
Sb13	Golograficheskiye metody i apparatura, primenyayemaya v fizicheskikh issledovaniyakh, i ikh metrologicheskoye obespecheniye. Moskva, 1976.
Sb14	Vsesoyuznyy simpozium po rasprostraneniyu lazernogo izlucheniya v atmosfere. 4th. Rasprostraneniye lazernogo izlucheniya v turbulentnoy atmosfere. Tezisy dokladov. Tomsk, 1977.
Sb15	Vsesoyuznyy simpozium po rasprostraneniyu lazernogo izlucheniya v atmosfere. 4th. Nelineynyye effekty pri rasprostranenii lazernogo izlucheniya v atmosfere. Tezisy dokladov. Tomsk, 1977.
Sb16	Distantsionnoye zondirovaniye atmosfery. Novosibirsk, Izd-vo Nauka, Sibirskoye otdeleniye, 1978.
Sb17	Vsesoyuznyy simpozium po rasprostraneniyu lazernogo izlucheniya v atmosfere. 4th. Pogloshcheniye i rasseyaniye lazernogo izlucheniya gazami i aerozolyami atmosfery. Tezisy dokladov. Tomsk, 1977.
Sb18	Vsesoyuznyy simpozium po rasprostraneniyu lazernogo izlucheniya v atmosfere. 4th. Metody i apparatura v eksperimental'nykh issledovaniyakh protsessov rasprostraneniya lazernogo izlucheniya v atmosfere. Tezisy dokladov. Tomsk, 1977.
Sb19	Vsesoyuznaya shkola po avtomatizatsii nauchnykh issledovaniy. 10th. Gelendzhik, 1976. Materialy. Struktura, Tekhnicheskiye sredstva i organizatsiya sistem avtomatizatsii nauchnykh issledovaniy. Leningrad, 1977.
Sb20	Issledovaniye poluprovodnykh soyedineniy slozhnogo sostava i p-n-perekhodov na ikh osnove, no. 1, Elista, 1976.
Sb21	Respublikanskaya konferentsiya. Tezisy dokladov. Struktura i fizika svoystva tonkikh plenok. Uzhgorod, 1977.
Sb22	Fizicheskiye metody issledovaniya prozrachnykh neodnorodnostey. Moskva, 1977.
Sb23	Khimiya plazmy, no. 4, Moskva, Atomizdat, 1977.
Sb24	Shirokopolosnyye ustroystva SVCh i sistemy optimal'nogo obrabotki signalov. Novosibirsk, 1976.

Sb25		Vibratsionnaya tekhnika. Moskva, 1977.
Sb26		Vsesoyuznaya akusticheskaya konferentsiya. 9th. 1977. Sektsiya Ch. Moskva, 1977.
Sb27		Teoreticheskaya spektroskopiya. Moskva, 1977.
Sb28		Gertsenovskiye chteniya. 30th. Fizicheskaya elektronika. Leningrad, 1977.
Sb29		Razvedochnaya geofizika, no. 81, 1978.
Sb30		Effektivnost' kapital'nikh vlozheniy i novoy tekhniki, no. 2, Cheboksary, 1977.
Sb31		Kongressa Karpato-Balkanoy geologicheskoy assotsiatsii. 11th. Materialy. Kiyev, Naukova dumka, 1977.
Sb32		Sudovozhdeniye, no. 22, Moskva, 1977.
Sb33		Vsesoyuznoye soveshchaniye po fizike vzaimodeystviya zaryazhennykh chastits s monikristallami. 8th. 1976. Trudy. Moskovskiy universitet, 1977.
Sb34		Vsemirnaya elektrotekhnicheskaya kongressa, Moskva, 21-25 June 1977, sektsiya 7, no. 17.
Sb35		Vsesoyuznaya shkoly po chislennym metodam v fizike plazmy. 1st. Zvenigorod, 1974. Materialy. Chislennyye metody v fizike plazmy. Moskva, Nauka, 1977.
Sb36		Dinamika sploshnoy sredy, no. 29, Novosibirsk, 1977.
TKiT	(TKTEA)	Tekhnika kino i televideniya
Trl		AN SSSR. Fizicheskiy institut. Trudy, no. 101, 1978.
Tr2		Samarkandskiy universitet. Trudy, no. 295, 1976.
Tr3		Azerbaydzhanskiy universitet. Uchenyye zapiski. Seriya fiziko-matematicheskikh nauk, no. 5, 1976.
Tr4		AN SSSR. Fizicheskiy institut. Trudy, no. 102, 1977.
Tr5		Severo-Kavkazkiy nauchnyy tsentr vysshey shkoly. Izvestiya. Yestestvenyye nauki, no. 1, 1977.
Tr6		Moskovskiy fiziko-tekhnicheskiy institut. Seriya Obshchaya i molekulyarnaya fizika. Trudy, no. 9, 1977.
Tr7		Tashkentskiy universitet. Trudy, no. 525, 1977.
Tr8		Radiotekhnicheskiy institut AN SSSR. Trudy, no. 27, 1977.
Tr9		TsNII svyazi. Sbornik nauchnykh trudy, no. 1, 1977.
Tr10		Leningradskiy elektrotekhnicheskiy institut. Izvestiya, no. 213, 1977.

Trll		Glavnaya geofizicheskaya observatoriya. Trudy, no. 395, 1977.
Tr12		Tbilisskiy universitet. Trudy, no. 181, 1976.
Tr13 bad		Severo-Kavkazkiy nauchnyy tsentr vysshey shkoly. Izvestiya. Tekhnicheskiye nauki, no. 2, 1977.
Tr14	iveredini) AN 1884) - Leithitcher	Tomskiy politekhnicheskiy institut. Izvestiya, no. 247, 1977.
TVT	(TVTYA)	Teplofizika vysokikh temperatur
UFN	(UFNAA)	Uspekhi fizicheskikh nauk
UFZh	(UFIZA)	Ukrainskiy fizicheskiy zhurnal
VMU	(VMUFA)	Moskovskiy universitet. Vestnik. Fizika, astronomiya
ZhETF	(ZEIFA)	Zhurnal eksperimental'noy i teoreticheskoy fiziki
ZhETF P	(ZFPRA)	Pis'ma v Zhurnal eksperimental'noy i teoreticheskoy fiziki
ZhPMTF	(ZPMFA)	Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki
ZhPS	(ZPSBA)	Zhurnal prikladnoy spektroskopii
ZhTF	(ZTEFA)	Zhurnal tekhnicheskoy fiziki
ZhTF P	(PZTFD)	Pis'ma v Zhurnal tekhnicheskoy fiziki
		BEST CONTROL OF STREET

V. AUTHOR AFFILIATIONS

- NS. Non-Soviet
- 0. Affiliation not given
- 1. Physics Institute im Lebedev, AN SSSR (Fizicheskiy institut im Lebedeva AN SSSR).
- 2. Moscow State University (Moskovskiy gosudarstvennyy universitet).
- 3. Institute of Physics, AN BSSR, Minsk (Institut fiziki AN BSSR).
- 4. Physicotechnical Institute im Ioffe, Leningrad (Fiziko-tekhnicheskiy institut im Ioffe).
- 5. Institute of Physics, AN UkrSSR, Kiev (Institut fiziki AN UkrSSR).
- 7. State Optical Institute im Vavilov, Leningrad (Gosudarstvennyy opticheskiy institut im Vavilova).
- 8. Radiophysics Scientific Research Institute at Gorkiy State University (Nauchno-issledovatel'skiy radiofizicheskiy institut pri Gor'kovskom gos universitet).
- 10. Institute of Semiconductor Physics, Siberian Branch, AN SSSR, Novosibirsk (Institut fiziki poluprovodnikov SOAN).
- 12. Leningrad State University (Leningradskiy gos universitet).
- 13. Institute of Crystallography, AN SSSR, Moscow (Institut kristallografiya AN SSSR).
- 14. University of Friendship Among Nations im Lumumba, Moscow (Universitet druzhby narodov im Lumumby).
- 15. Institute of Radio Engineering and Electronics, AN SSSR, Moscow (Institut radiotekhniki i elektroniki AN SSSR).
- 16. Moscow Engineering Physics Institute (Moskovskiy inzhenerno-fizicheskiy institut).
- 17. Institute of Mechanical Problems, AN SSSR, Moscow (Institut problem mekhaniki AN SSSR).
- 22. Institute of metallurgy im Baykov, Moscow (Institut metallurgii im Baykova).
- 23. Institute of Atomic Energy im Kurchatov, Moscow (Institut atomnoy energii im Kurchatova).
- 24. Moscow Higher Technical College im Bauman (Moskovskoye vyssheye tekhnicheskoye uchilishche im Baumana).
- 29. Leningrad Polytechnic Institute (Leningradskiy politekhnicheskiy institut).
- 30. Leningrad Institute of Precision Mechanics and Optics (Leningradskiy institut tochnoy mekhaniki i optiki).
- 35. Khar'kov Institute of Radioelectronics (Khar'kovskiy institut radioelektroniki).
- 36. Physicotechnical Institute of Low Temperatures, AN UkrSSR, Khar'kov (Fiziko-tekhnicheskiy institut nizkikh temperatur AN UkrSSR).
- 37. Yerevan State University (Yerevanskiy gos universitet).
- 38. Kazan' Physicotechnical Institute (Kazanskiy fiziko-tekhnicheskiy institut).
- 40. Tbilisi State University (Tbilisskiy gos universitet).
- 44. Institute of Applied Physics, AN MSSR, Kishinev (Institut prikladnoy fiziki AN MSSR).
- 45. Saratov State University (Saratovskiy gos universitet).
- 49. Vilnius State University (Vil'nyusskiy gos universitet).
- 50. Institute of Semiconductor Physics, AN LitSSR, Vilnius (Institut fiziki poluprovodnikov AN LitSSR).
- 51. Kiev State University (Kiyevskiy gos universitet).
- Institute of Physics Research, AN ArmSSR (Institut fizicheskikh issledovaniy AN ArmSSR).

- 61. Institute of Physics and Astronomy, AN EstSSR (Institut fiziki i astronomii AN EstSSR).
- 64. Institut of Atmospheric Physics, AN SSSR (Institut fiziki atmosfery AN SSSR).
- 65. Institute of Problems of Physics, AN SSSR (Institut fizicheskikh problem AN SSSR).
- 67. Institute of Physics of Chemistry, AN SSSR (Institut khimicheskoy fiziki AN SSSR).
- 71. Institute of Applied Mathematics, AN SSSR (Institut prikladnoy matematiki AN SSSR).
- 72. Institute of Spectroscopy, AN SSSR (Institut spektroskopii AN SSSR).
- 73. Institute of Theoretical Physics im Landau, AN SSSR (Institut teoreticheskoy fiziki im Landau AN SSSR).
- 74. Institute of High Temperatures, AN SSSR (Institut vysokikh temperatur AN SSSR).
- 78. Institute of Atmospheric Optics, Siberian Branch AN SSSR (Institut optiki atmosfery SOAN).
- 79. Institute of Nuclear Physics, Siberian Branch AN SSSR (Institut yadernoy fiziki SOAN).
- 86. Azerbaydzhan State University (Azerbaydzhanskiy gos universitet).
- 88. Dagestan State University (Dagestanskiy gos universitet).
- 98. Institute of Nuclear Physics at Moscow State University (Institut yadernoy fiziki pri Moskovskom gos universitete).
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- 110. Leningrad Electrotechnical Institute (Leningradskiy elektrotekhnicheskiy institut).
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- 114. L'vov State University (L'vovskiy gos universitet).
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- 135. Central Scientific Research Institute of Communications (Tsentral'nyy NII svyazi).
- 136. Uzhgorod State University (Uzhgorodskiy gos universitet).
- 140. All Union Scientific Research Institute of Physicotechnical and Radiotechnical Measurements (VNII fiziko-tekhnicheskikh i radiotekhnicheskikh izmereniy, VNIFTRI).
- 161. Moscow Institute of Radio Engineering, Electronics and Automation (Moskovskiy institut radiotekhniki, elektroniki i avtomatiki).
- 1.79. Moscow Institute of Fine Chemical Technology im Lomonosov (Moskovskiy institut tonkoy khimicheskoy tekhnologii im Lomonosova).
- 184. Institute of Geochemistry and Analytical Chemistry im Vernadskiy, AN SSSR, Moscow (Institut geokhimii i analiticheskoy khimii im Vernadskogo AN SSSR).
- 193. Institute of Theoretical and Applied Mechanics, Siberian Branch AN SSSR, Novosibirsk (Institut teoreticheskoy i prikladnoy mekhaniki SOAN).
- 197. Tomsk Polytechnic Institute (Tomskiy politekhnicheskiy institut).
- 207. Main Geophysical Observatory (Glavnaya geofizicheskaya observatoriya).
- 208. Tula Polytechnic Institute (Tul'skiy politekhnicheskiy institut).
- 210. Institute of Physics, Siberian Branch, AN SSSR (Institut fiziki SOAN).
- 227. Tashkent State University (Tashkentskiy gos universitet).
- 231. Scientific Research Institute of Motion Pictures and Photography (NI kinofotoinstitut).
- 240. Odessa State University (Odesskiy gos universitet).
- 243. Radio Engineering Institute, AN SSSR (Radiotekhnicheskiy institut AN SSSR).
- 248. Institute of Mechanics at Moscow State University (Institut mekhaniki pri Moskovskom gos universitete).

- 255. Tallinn Polytechnical Institute (Tallinskiy politekhnicheskiy institut).
- 264. Institute of Radiophysics and Electronics, AN ArmSSR (institut radiofiziki i elektroniki AN ArmSSR).
- 278. Samarkand State University (Samarkandskiy gos universitet).
- 299. Institute of Electronics, AN BSSR (Institut elektroniki AN BSSR).
- 305. Central Design Bureau of Motion Picture Equipment (Tsentral'noye konstruktorskoye byuro kinoapparatury).
- 321. Mogilev Branch of the Institute of Physics, AN BSSR (Mogilevskiy filial Instituta fiziki AN BSSR).
- 334. Scientific Research Institute of Applied Physical Problems at Belorussian State University (NII prikladnykh fizicheskikh problem pri Belorusskom gos universitete).
- 343. North Caucasus Scientific Center of Higher Education (Severo-Kavkazskiy nauchnyy tsentr vysshey shkoly).
- 396. "Optika" Special Design Bureau for Scientific Instrument Manufacture, Siberian Branch, AN SSSR (Spetsial'noye konstruktorskoye byuro nauchnogo priborostroyeniya "Optika" SOAN).
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- 426. Institute of Applied Physics, AN SSSR, Gor'kiy (Institut prikladnoy fiziki AN SSSR).
- 434. Mogilev Branch of the Physicotechnical Institute, AN BSSR (Mogilevskiy filial Fiziko-tekhnicheskogo instituta AN BSSR).
- 441. Scientific Research Institute of Physics of Leningrad State University (NII fiziki Leningradskogo gos universiteta).
- 442. Institute of High Energy Physics, AN KazSSR, Alma-Ata (Institut fiziki vysokikh energiy AN KazSSR).
- 444. Institute of Nuclear Physics, AN KazSSR, Alma-Ata (Institut yadernoy fiziki AN KazSSR)
- 447. Institute of Mining Mechanics, AN GruzSSR (Institut gornoy mekhaniki AN GruzSSR).

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